

# **Land Use Simulation Game**

## **Level**

Grades 9-11

## **Subject Areas**

Social Studies, Science, Language Arts, Creative Arts

## **Objectives**

Students will:

1. Name, record, and classify possible land uses (Activity A)
2. Develop and give presentations (Activity B)
3. Analyze characteristics of simulations (Activity C)

## **Materials**

- Chairs, 1 per student
- Tables for small group of 3-4 students
- Set of colored markers for each table
- Set of colored markers for facilitator
- Two easels with paper
- Masking tape to affix paper to walls
- Population figures for local communities
- Activity Sheet A: Brainstorming Possible Land Uses
- Activity Sheet: Develop And Give Presentations
- Activity Sheet: County Board Members

## **Duration**

60 to 75 minutes, or longer if you have in depth discussion

## **Overview**

Students are presented with a land use dilemma. They assess potential uses in small groups, make presentations to the whole group while role-playing common interests found in land management and find out how decisions are often made.

Note: Although the recent clear cut is real, as is the map, place names, some of the area's industry information, and many pieces of the following information about Charleston are fictionalized to increase the effectiveness of this activity.

## **Procedure**

1. **Set the Stage (Activity A);** Review quickly what will take place. "During this activity we will participate in a simulation game concerning land use near the South Slough, analyze what we have done and discuss some ideas and ways to develop our own simulation game about local environmental issues and concerns here." You will assume the roles of decision makers in a certain environment and compete for certain objectives according to specified procedures and rules.
  - A. Provide map of the South Slough Area and orient students to the recent clear cut. Excellent maps of the area can be obtained online from [www.topozone.com](http://www.topozone.com) and typing in South Slough, Oregon in the appropriate boxes. Select the Coos County option (not Lane.)
  - B. **Distribute Activity Sheet A.** Read the problem aloud to the group. "The problem is to identify some possible land uses for the 160 acres of recently clear cut land that is now available for the city's use."
    - i. Ask participants to read the information given on the sheet and list possible uses of the land to meet the city's needs.
    - ii. Give them 10 minutes to read and brainstorm possible land uses. Have them work individually.

### **C. Retrieve the Data**

- i. When most people have had time to write down uses, ask: "What are some possible uses for the undeveloped land? As people respond, compile the list on one of the easels just as it is said to you (don't paraphrase). If they are too wordy, ask: "How shall I write it on the chart?" List all suggestions specific or general. When you have enough material, ask the next question.
- ii. "Which of these possible land uses are similar?" Designate similar uses by symbols, colors, or other methods. Change items among categories if the students change their minds. Allow for any particular use to be grouped in multiple categories if students can't agree on groupings. When most are designated, or the group seems to run out of thoughts, move on.
- iii. "What title could we give to all the items in the same category?" (e.g. Recreation, industry, utilities, housing, commercial, preservation, etc.)

### **D. Develop and Give Presentations (Activity B)**

- i. Have students separate into small groups that equal the number of land use categories that you obtained. Groups of 4-5 students are ideal, though they should not exceed 8. Assign one of the categories to each small group for them to represent. These assignments can be random, or as an extension, by individual preferences, or by projected links to further activities on land use simulation that you generate about your area and current issues.
- ii. **Hand out Activity Sheet B: Develop and Give Presentations.** Inform the students that they have 10 minutes in their groups to list and analyze the advantages and disadvantages of the possible land uses in their assigned category. They may consider those listed on the board or any others they can think of as a group. (It is important to stress that this activity is to analyze the uses of the land.)
- iii. Tell the groups they are to spend 15-20 minutes developing a land use plan for the area in their assigned land use category.
- iv. Note: see vii. For additional direction after each group has started planning. If all directions are given up front, many groups start drawing a map before considering different land uses.
- v. After about 5 minutes of planning time make the following announcements.
  1. "We have just received word that due to current workload from reading environmental impact statements, the members of the Board of County Commissioners have all just resigned. Each group has one minute to elect one group member to represent them on the Board."
  2. "Will the new Board representatives please follow \_(a staff member)\_ out of the room?"
- vi. A staff member takes the new Board to another location, hands out and reviews **Activity Sheet C** with them.
  1. Tell them they have 15 minutes before the meeting begins.
  2. Have them concentrate on the evaluation criteria first.
  3. Have them elect a chairperson to preside over the group presentations.
  4. Have the chairperson read the announcement at the bottom of Activity Sheet C.
- vii. After the new Board members leave the main room, announce to the planning groups, "You have about 15 minutes to finish your plan and develop a 3 minute presentation to be made to the County Board of Commissioners. The presentation must include a visual display such as a land use map and more than one person in each group must participate in making the presentation."
  1. Pass out felt pens and large sheets of paper.
  2. You may have to give extra time to finish making plans and making maps

- viii. Note: allow 40-50 minutes depending on the number of groups. If you are doing this in a classroom, you can have students develop the presentations one day and present them the next.
- ix. When all groups are ready, the County Board enters and sits in the front. A timekeeper is appointed to cut off all presentations at 3 minutes (with a one minute warning). The chairperson announces the criteria on Activity C announcements and adheres to them.
- x. When the presentations are complete, the Board retires for 5-10 minutes to select the best proposal.
- xi. While the Board is meeting, each small group develops a list of criteria that they think should be used in choosing among the plans submitted.
- xii. County Board re-enters the room and reads their criteria aloud.
- xiii. County Board Chair announces the decisions, and Board members state their reasons. Board adjourns.
- xiv. The person in charge must move rapidly to the next question to avoid shouting matches between the losing groups (that come with invested opinions). Have Board members return to the groups who selected them. The main purpose is to evaluate the process, not to get bogged down on the content of the issue.

#### **E. Retrieve the Data**

- i. Ask the students, "What additional data would you like to have had for planning your group's proposal?" List them on the board. {e.g. topography, vegetation, economy of the area, railroad, shopping centers, adjacent land, climate, soil survey, historical info, flood plain, wildlife, private interests of the Board Control, available money, educational needs, State regulations, existing zonation, political climate, population information (age, sex, ethnicities, jobs, etc.)}.
- ii. Ask, "Where would you be able to find more information on these topics?"
- iii. Point out that this is one of the most important parts of this activity because it emphasizes that we need a variety of information and data before we can intelligently make a land management or environmental decision to best meet the needs of people and their environment. This list has many of the elements that need to be considered in studying any local environmental issue or concern. It also includes elements of all the curriculum subject areas. (social studies, environmental science, language arts, communication technologies, art, etc.)

#### **F. Closure** Ask;

- 1. " Did any new leadership emerge during this session? What factors enabled this to happen?
- 2. Did you group work as a team? What did your group do to ensure participation by all members of the group?
- 3. Where you assigned an interest group that you didn't want to represent? How did you feel?

#### **Extension Activity**

- Develop a simulation based on current affairs near their home community:
  - a) Have students identify and describe three component parts of simulation games and create a model to follow.
  - b) Have students pick a current local issue of their choice and divide into teams to do background research from newspaper articles, community groups, and Internet research.
  - c) Students should be able to name and describe at least 8 types of data needed to make land use decisions and describe how any resulting decisions would affect their life, community, and the environment.

- d) Students should be able to identify cause and affect relationships that exist in environmental management.
- e) Students should be able to discuss how opposing interests might affect a land use decision.

**Sources:**

Investigating Your Environment, *Teaching Materials for Environmental Education*  
U.S. Dept of Agriculture, Pacific Northwest Region, 1993

[www.topozone.com](http://www.topozone.com)